



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/722,714

11/25/2003

Robert J. Cashler

DP-310218

7498

22851

7590

09/02/2005

DELPHI TECHNOLOGIES, INC.

M/C 480-410-202

PO BOX 5052

TROY, MI 48007

EXAMINER

ARTHUR JEANGLAUDE, GERTRUDE

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,714

Applicant(s)

CASHLER, ROBERT J.

Examiner

Gertrude Arthur-Jeanglaude

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

9

DETAILED ACTION

Claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 7, 9-10, 16, 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Hu et al. (U.s. Patent No. 6,883,631).

As to claim 1, Hu et al. disclose an apparatus for protecting occupants of vehicles, the apparatus comprising: an object detector (26; sensor) to monitor a position of an object relative to a vehicle; a processor (60) in communication with the object detector ((14) and configured to determine a likelihood of a collision between the vehicle and the object based upon data received from the object detector; Hu et al. further discloses a deployment device (36) in communication with the processor and configured to deploy a physical safety countermeasure before the collision occurs if the processor determines that the collision is likely (See col. 3, lines 53-66; col.11, lines 34-67).

As to claim 7, Hu et al. discloses the object detector includes a radar-based device (See col. 3, lines 61-65).

As to claim 9, Hu et al. disclose the physical safety countermeasure is configured to at least one of change inflating an air bag (See abstract).

As to claim 10, Hu et al. disclose a vehicle movement detector in communication with the processor and configured to monitor movement of the vehicle, the processor being configured to determine a likelihood of a collision between the vehicle and the object based upon data received from the vehicle movement detector (See col. 12, lines 58-67).

As to claim 16, Hu et al. disclose a method of protecting occupants of vehicles comprising the steps of sensing that a vehicle is likely to be involved in a collision; and deploying a physical safety countermeasure before the collision and in response to the sensing step (See col. 3, lines 53-66; col. 4, lines 5-19).

As to claim 21, Hu et al. disclose the sensing step includes calculating a plurality of factors related to movements of at least one of the vehicle and an object; calculating a decision rating based upon the factors; and comparing the decision rating to a threshold value (See Fig. 20)

As to claim 22, Hu et al. disclose the decision rating is calculated as an average of the factors (See col. 2, lines 1-45)

As to claim 23, Hu et al. disclose the factors include at least one of an offset from lane center missed distance (See col. 2, lines 7-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3661

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (U.S. Patent No. 6,883,631) in view of Levine (U.S. Patent No. 6,820,895).

As to claims 3, 19, Hu et al. disclose the deployment device as discussed but fails to specifically disclose the deployment device is configured to deploy at least one of an irreversible physical safety countermeasure and a reversible physical safety countermeasure before the collision occurs if the processor determines that the collision is likely within a first time period after a present time; and deploy a reversible physical safety countermeasure before the collision occurs if the processor determines that the collision is likely within a second time after the present time. In an analogous art, Levine disclose the deployment device is configured to deploy at least one of an irreversible physical safety countermeasure (air bag; see abstract) and a reversible physical safety countermeasure (seat belt sensor, see abstract) before the collision occurs if the processor determines that the collision is likely within a first time period after a present time; and deploy a reversible physical safety countermeasure (seat belt, sensor; see abstract; col. 13, lines 3-20) before the collision occurs if the processor determines that the collision is likely within a second time after the present time. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hu et al. with that of Levine by deploying at least one of an irreversible physical safety countermeasure (air bag) and a reversible physical safety countermeasure (seat belt sensor) before the collision occurs if the processor

Art Unit: 3661

determines that the collision is likely within a first time period after a present time; and deploy a reversible physical safety countermeasure (seat belt sensor) before the collision occurs if the processor determines that the collision is likely within a second time period after the present time because it would maintain a minimum safe clearance between an air-bag mounted in the vehicle and a vehicle passenger.

As to claim 4, Hu et al. disclose an irreversible physical safety countermeasure (air bag) and a reversible physical safety countermeasure comprises an irreversible physical safety countermeasure if at least a speed of the vehicle is above a threshold speed (See col. 4, lines 25-66).

As to claims 5-6, Hu et al. disclose the vehicle with a field of view to provide sufficient time to deploy the external air bag system (See col. 2, lines 7-16) wherein it would have been obvious to one of ordinary skill in the art at the time of the invention to have a first time period and a second time period in order to controllably inflate the confinements.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (U.S. Patent No. 6,883,631) in view of Strumolo et al. (U.S. Patent No. 6,831,572).

As to claim 8, Hu et al. disclose all but fail to specifically disclose the deployment device is configured to deploy the physical safety countermeasure before the collision occurs if the processor determines that a probability of the collision is greater than 99%. In an analogous art, Strumolo et al. disclose a deployment device (air bag deployment) wherein factors are used in determining the probability of a collision; therefore one

Art Unit: 3661

would obviously consider deployment based on probability especially if it's greater than 99% (See col. 5, lines 51-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hu et al. with that of Strumolo et al. by determining a probability of a collision in order to improve warning system for use in a vehicle.

Claims 2, 11-15, 17-18, 20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (U.S. Patent No. 6,883,631).

As to claims 2, 17, Hu et al. disclose the processor is configured to determine a likelihood of a collision between the vehicle and the object occurring (wherein sufficient time is provided to deploy the external bag (deployment device) see col. 2, lines 7-16). Hu et al. does not specifically disclose that the occurrence is within less than 1 second after a present time. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the processing system of Hu et al. by having sufficient time such as within less than 1 second after a present time for a processor configured to determine a likelihood between the vehicle and the object occurring within less than 1 second after a present time in order to control the deployment device (inflatable confinements).

As to claim 11, Hu et al. disclose a method of protecting occupants of vehicles comprising the steps of sensing (via sensor 26) that a vehicle is likely to be involved in a collision occurring; and also discloses deploying a safety countermeasure before the collision and in response to the sensing step (See col. 2, lines 2-16). Hu et al. does not

Art Unit: 3661

specifically disclose that the occurrence is within less than 1 second after a present time. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the processing system of Hu et al. by having sufficient time such as within less than 1 second after a present time in order to control the deployment device (inflatable confinements).

As to claim 15, Hu et al. disclose the physical safety countermeasure is configured to at least one of change inflating an air bag (See abstract).

As to claims 12-13, 18, 20, Hu et al. disclose the sensing step includes monitoring a position of an object relative to the vehicle and sensing that the vehicle is likely to be involved in a collision with the object (See col. 12, lines 58-67).

As to claim 14, Hu et al. disclose the monitoring step includes at least one of vehicle speed (See col. 4, lines 25-37).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Breed (U.S. Patent No. 6,823,244)

Farmer (U.S. Patent No. 6,438,491)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gertrude Arthur-Jeanglaude whose telephone number is (571) 272-6954. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 6:00 p.m..

Art Unit: 3661

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GAJ

GAJ

August 26, 2005

Gertrude A. Jeanglaude
GERTRUDE A. JEANGLAUDE
PRIMARY EXAMINER